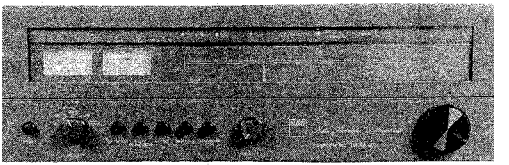
SERVICE MANUAL

NAD MODEL 4080

AM/FM STEREO TUNER



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SPECIFICATION

FM Tuner Section

Input Sensitivity	IHF, 30dB quieting		1.8μV
	IHF, 50dB S/N Mono		3.0μV
	IHF, 50dB S/N Stereo		35μV
Signal to Noise Ratio (A Weighted, at 65 dBf) mono			74dB
			70dB
Frequency Response, 30—15K Hz			±0.5dB
De-emphasis Accuracy 75 μsec			±0.3dB
Channel Separation	1 KHz		40dB
	30 – 15K Hz		30dB
Selectivity, alternate channel (400 KHz)			70dB
Capture Ratio at 45 dBf and 65 dBf			1.0dB
AM Suppression at 45dBf and 65dBf			65dB
Image Rejection			70dB
I. F. Rejection			80dB
SCA Rejection			70dB
Pilot Signal Suppression			55dB
THD at 100% Modulation	1 KHZ	Mono	0.2%
		Stereo	0.3%
	100 HZ	Mono	0.2%
		Stereo	0.3%
	6 KHZ	Mono	0.3%
		Stereo	0.4%
THD, Stereo, 1 KHZ	50%	Modulation	0.3%
	150%	Modulation	0.4%

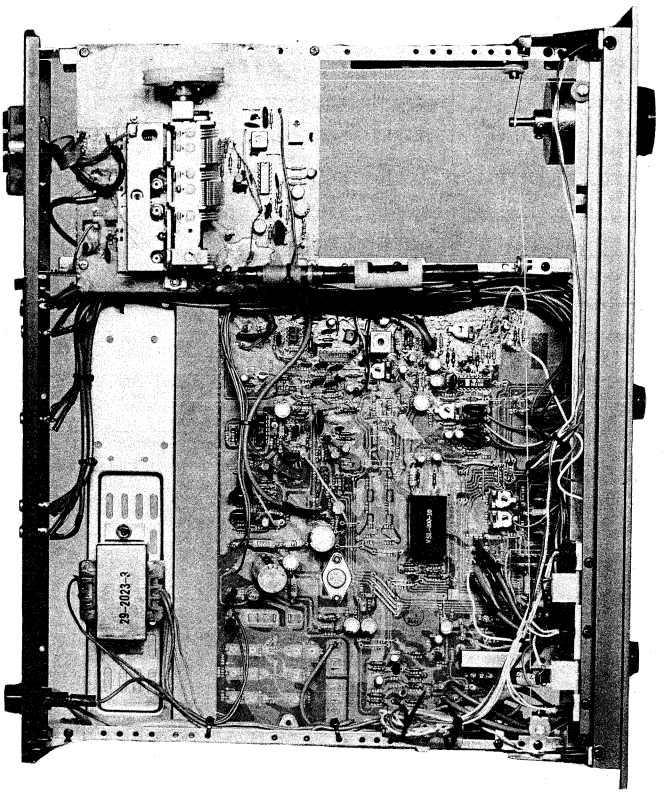
AM Tuner Section

Usable Sensitivity		300μV
Selectivity		30dB
Image Rejection		55dB
I. F. Rejection		45dB

Physical Specification

Dimensions	Width x Height x Depth	17.7x5.5x15.6 inch
		45x14x39.5 cm
Net Weight		19 lbs/8.5kg
Shipping Weight		24 lbs/11kg
Power Consumption		20VA

INSIDE VIEW OF UNIT



ALIGNMENT (TUNER)

1. AM ALIGNMENT: 1. Selector switch in AM position
2. AC line voltage at rated voltage
3. Monitor output at FIXED OUTPUT

Section		AM SG Connection	AM SG Carrier Freq.	AM SG Modulation	Dial Setting	Indicator	Adjustment Point	Adjust for
AM IF		Hot side of SG output through 200 pF to AM antenna trimmer Terminal (TP 1)	455 KHz	30% Mod. 400 Hz	Point of non-interference	V. T. V. M. or Oscilloscope	LT301	Maxinum output
AM RF	1	Hot side of SG output through 200 pF to EXT AM antenna Terminal on rear panel	600KHz	30% MOD. 400 Hz	600KHz	V.T.V.M or Oscilloscope	LO301 LA301	Maximum output
	2		1400 KHz	30% MOD 400Hz	1400KHz		TC–4 TC–2	
	3		Repeat Step 4 and Step 2					

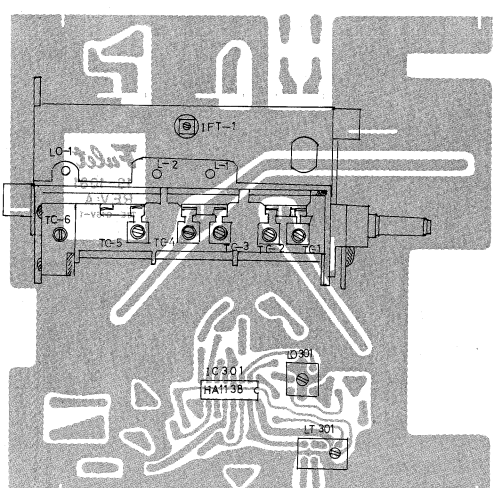
2. FM ALIGNMENT: 1. Selector switch in FM AUTO position
2. AC line voltage at rated voltage
3. Monitor output at FIXED OUTPUT

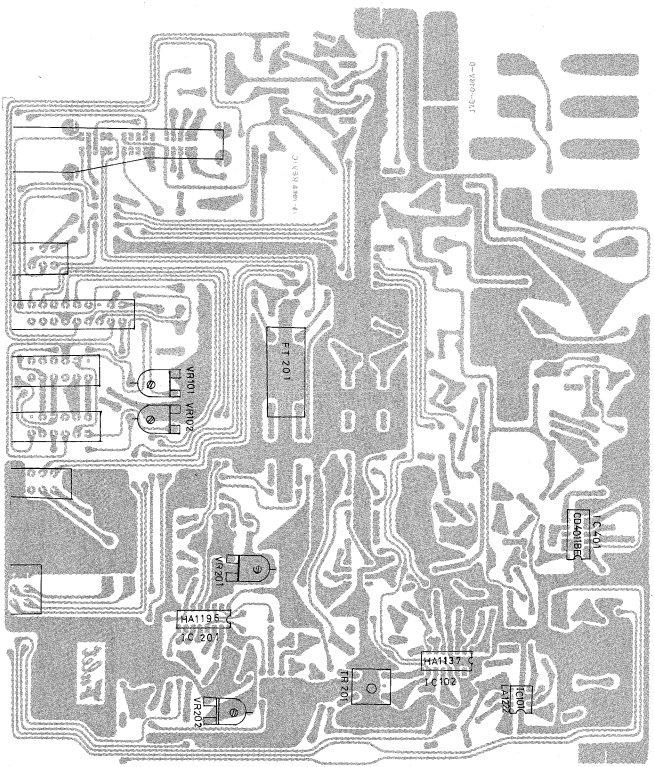
Section		FM SG Connection	FM SG Carrier Freq.	FM SG Modulation	Dial Setting	Indicator	Adjustment Point	Adjust for
FM IF		–	–	–	Point of non-interference	Tuning Meter of set	TR101 Lower side	Center Indication
FM RF	1	Connect to FM 300 ohm antenna Terminal on the rear panel through FM dumy antenna	90MHz	100% Mod	90 MHz	V. T. V. M. or Oscilloscope	L0-1,L-1 L-2,IFT-1	Maximum output
	2		106MHz	400 Hz	106 MHz		TC–1, TC-3 TC-5, TC-6	
	3		Repeat Step 1 and Step 2					
FM Mono Distortion	1		98MHz	100% Mod 400Hz	98MHz	Distortion Meter	TR101 upper side	Minimull Distortion
	2		Repeat FMIF and FM Mono Distortion step 1.					
FM Output	1		Selector switch in CAL. TONE position, record the output tevel as XmV, then turn it back to FM AUTO.					—
	2		98MHz	100% Mod. 400Hz	98MHz	V.T.V.M.	VR103	2XmV
FM Mute1	1		Muting 1, Push switch ON. Muting 2, push switch OFF. Adjust attunuator of FM SG for antenna input 10 dB.					—
	2		98MHz	100% Mod. 400Hz	98MHz	V.T.V.M. or Oscilloscope	VR101	Output just disappear
	3		Increase FM SG output 4dB more to get full audio output.					—
	4		If full audio output acnnot be got, repeat step 1,2,3.					—
FM Mute2	1		Muting 1, push switch OFF. Muting 2, push switch ON. Adjust attunuator of FM SG for antenna input 26dB.					—
	2		98MHz	100% Mod. 400Hz	98MHz	V.T.V.M. or Oscilloscope	VR102	Output just disappear
	3		Increase FM SG output 4dB more to get full audio output.					—
	4		If full audio output cannot be got, repeat step 1,2,3.					—

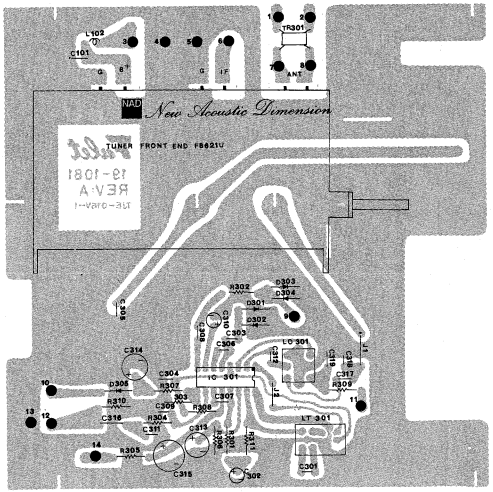
ALIGNMENT (TUNER)

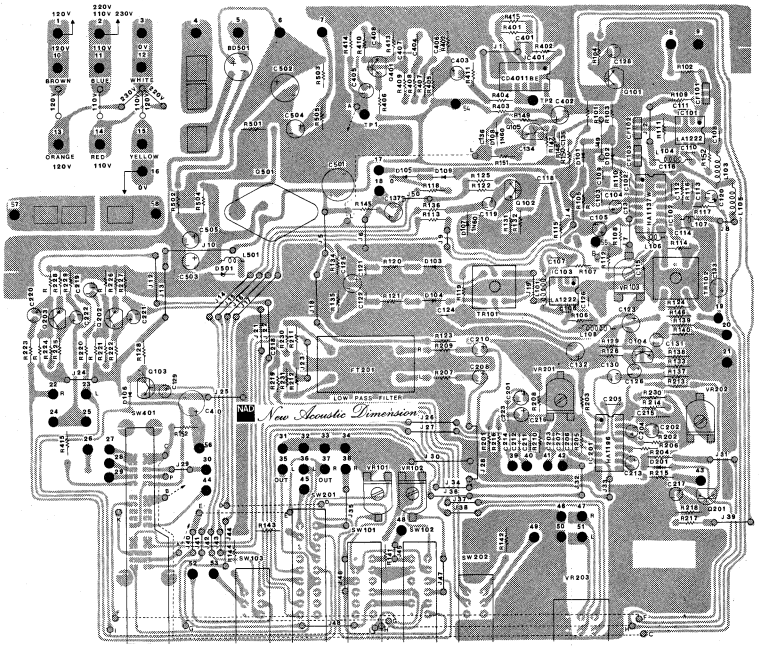
3. FM MPX ALIGNMENT: 1. Same as FM ALIGNMENT 1, 2, 3
2. FM SG is external modulated by stereo SG and connected to FM 300Ω antenna terminal on the rear panel through FM dumy antenna

Section	Step	FM SG	Stereo SG	Dial Setting	Indicator	Adjustment	Adjust for
MPX pilot	1	—	—	Point of no signal received	Connet frequency count counter through look to TP 10	VR202	76KHz ± 30Hz
	2	98MHz	10% 19KHz Pilot 90% L + R, L – R	98MHz	—	VR202	Stereo LED Light
Separation	1	98MHz	10% 19KHz Pilot L only	98MHz	Connect VTI VTIM or oscilloscope to R FIXED OUTPUT	VR201	Minimum output
	2		10% 19KHz Pilot R only	98MHz	Connect VTVM or oscilloscipe to L FIXED OUTPUT	VR201	
	3		Repeat Step 1 and Step 2				
	4		If there is an excessive difference between leak-free effects of both channels, slightly adjust VR 201 so that the levels of signal leakage of both channels are equal				

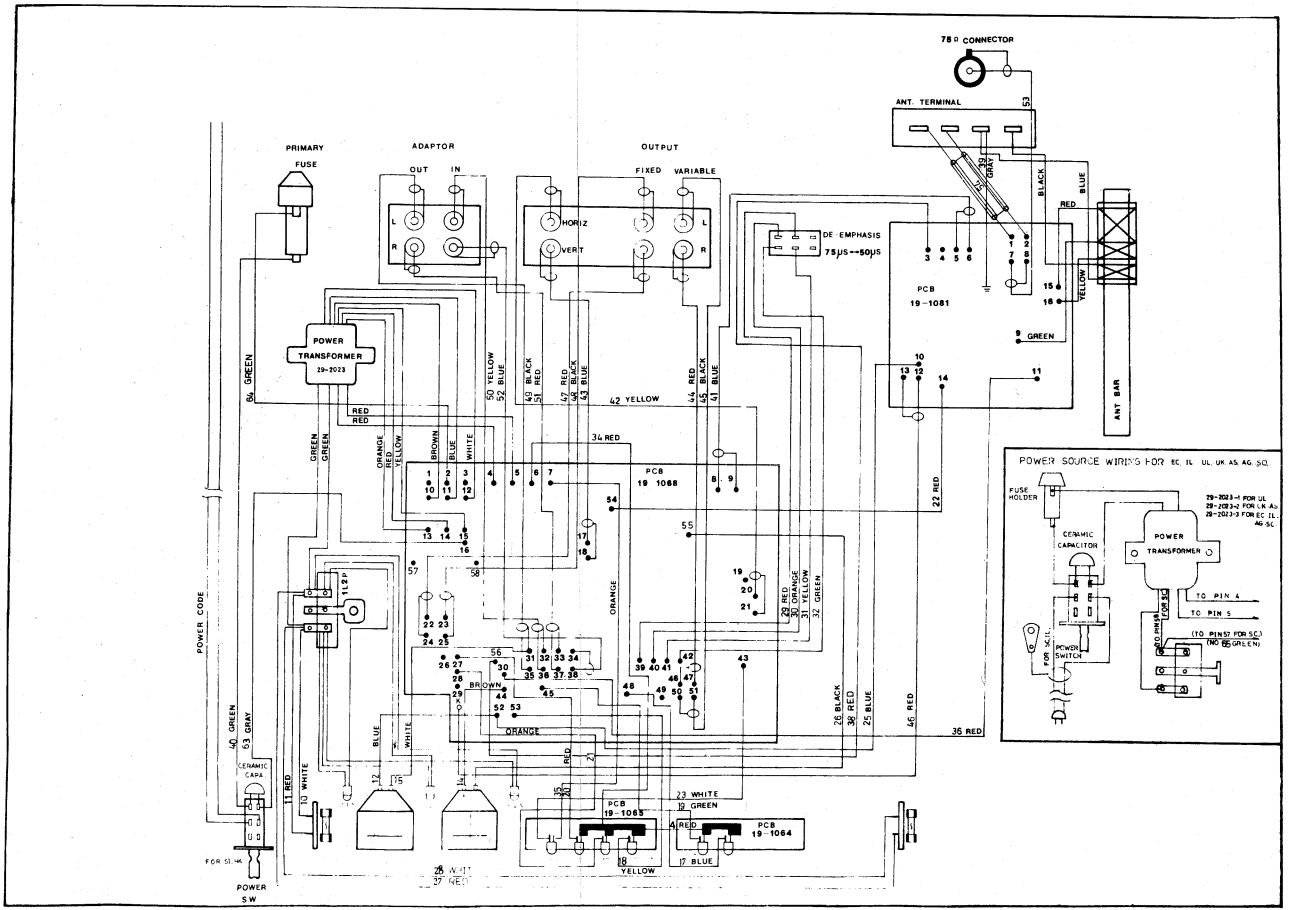



IC401
CD4518BE
IC402
CD4518BE
IC201
HA1137
FR201
FT201
HA11955
IC202
VR201
VR202
VR101
VR102
FT201

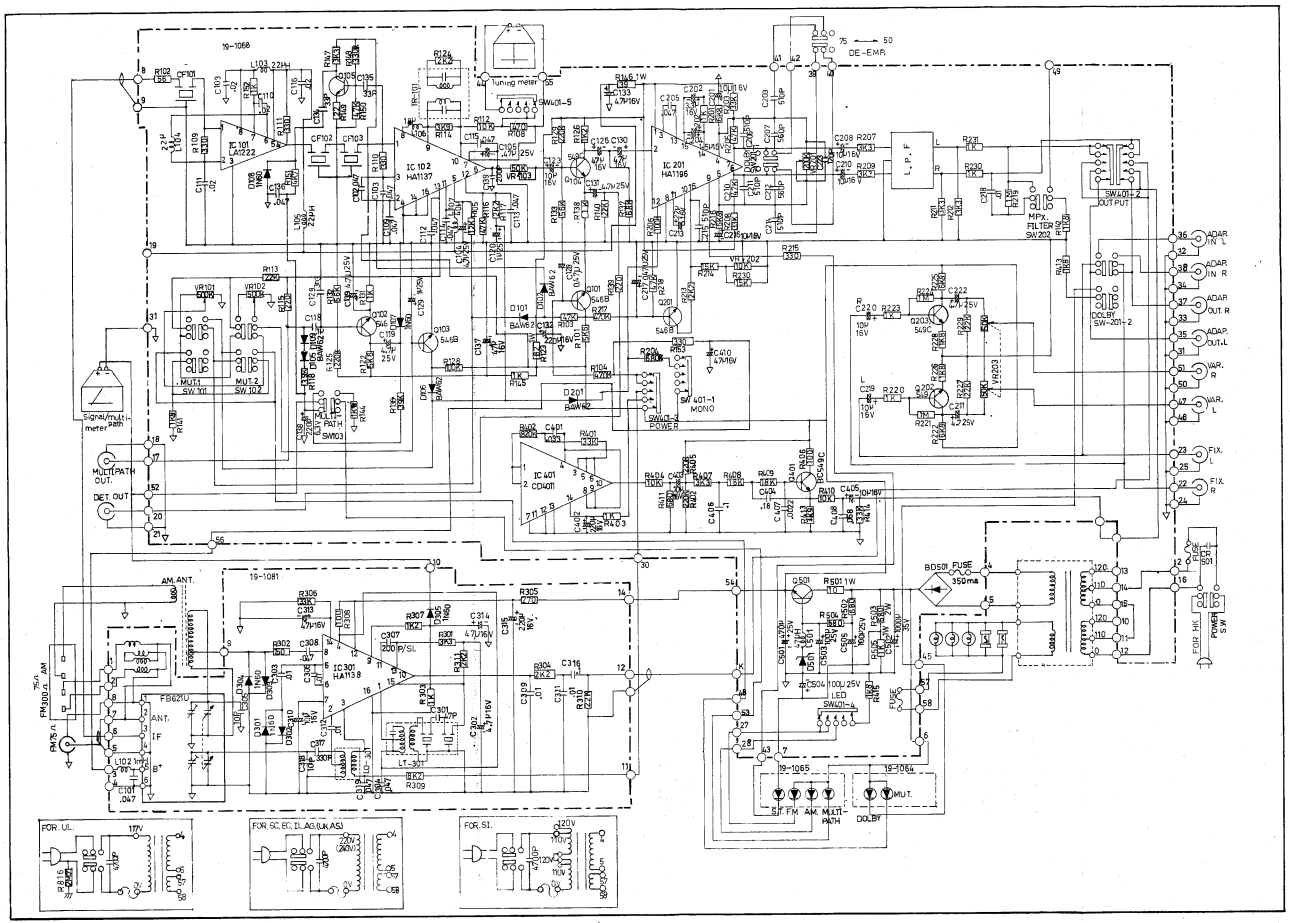

NAD
New Acoustic Dimension
TUNER FRONT END FB621U
REV-A
TR301
ANT
L102
C101
L301
LT 301
IC 301
LO 301


120V
230V
110V
BROWN
BLUE
WHITE
ORANGE
RED
YELLOW
NAD
New Acoustic Dimension
LOW PASS FILTER
FT301

WIRING DIAGRAM



CIRCUIT DIAGRAM



PARTS LIST

90–1068

ITEM	PARTS NO	DESCRIPTION	Q'TY	SYMBOL NO
1	16–¼CM101J	CARBON RES. 100 OHM ± 5% ¼W	1	R119
2	16–¼CM102J	CARBON RES. 1K OHM ± 5% ¼W	7	R202, 221, 223, 152, 138, 230, 231
3	16–¼CM103J	CARBON RES. 10K OHM ± 5% ¼W	3	R112, 404, 410
4	16–¼CM104J	CARBON RES. 100K OHM ± 5% ¼W	2	R206, 128
5	16–¼CM105J	CARBON RES. 1M OHM ± 5% ¼W	3	R221, 224, 219
6	16–¼CM122J	CARBON RES. 1K2 OHM ± 5% ¼W	1	R126
7	16–¼CM123J	CARBON RES. 12K OHM ± 5% ¼W	1	R105
8	16–¼CM153J	CARBON RES. 15K OHM ± 5% ¼W	2	R214, 230
9	16–¼CM182J	CARBON RES. 1K8 OHM ± 5% ¼W	2	R226, 228
10	16–¼CM183J	CARBON RES. 18K OHM ± 5% ¼W	2	R408, 409
11	16–¼CM220J	CARBON RES. 22 OHM ± 5% ¼W	1	R149
12	16–¼CM221J	CARBON RES. 220 OHM ± 5% ¼W	3	R115, 135, 139
13	16–¼CM222J	CARBON RES. 2K2 OHM ± 5% ¼W	4	R213, 117, 124, 311
14	16–¼CM223J	CARBON RES. 22K OHM ± 5% ¼W	4	R113, 140, 227, 229
15	16–¼CM224J	CARBON RES. 220K OHM ± 5% ¼W	4	R125, 129, 405, 412
16	16–¼CM331J	CARBON RES. 330 OHM ± 5% ¼W	4	R109, 110, 111, 215
17	16–¼CM332J	CARBON RES. 3K3 OHM ± 5% ¼W	6	R207, 209, 211, 212, 407, 147
18	16–¼CM333J	CARBON RES. 33K OHM ± 5% ¼W	6	R121, 414, 203, 208, 107, 401
19	16–¼CM334J	CARBON RES. 330K OHM ± 5% ¼W	1	R148
20	16–¼CM392J	CARBON RES. 3K9 OHM ± 5% ¼W	2	R413, 114
21	16–¼CM393J	CARBON RES. 39K OHM ± 5% ¼W	2	R118, 136
22	16–¼CM471J	CARBON RES. 470 OHM ± 5% ¼W	1	R108
23	16–¼CM472J	CARBON RES. 4K7 OHM ± 5% ¼W	1	R151
24	16–¼CM473J	CARBON RES. 47K OHM ± 5% ¼W	6	R116, 205, 210, 218, 103, 150
25	16–¼CM474J	CARBON RES. 470K OHM ± 5% ¼W	2	R104, 217
26	16–¼CM560J	CARBON RES. 56 OHM ± 5% ¼W	1	R102
27	16–¼CM562J	CARBON RES. 5K6 OHM ± 5% ¼W	2	R101, 122
28	16–¼CM563J	CARBON RES. 56K OHM ± 5% ¼W	3	R132, 133, 415
29	16–¼CM681J	CARBON RES. 680 OHM ± 5% ¼W	1	R411
30	16–¼CM682J	CARBON RES. 6K8 OHM ± 5% ¼W	4	R201, 216, 222, 225
31	16–¼CM684J	CARBON RES. 680K OHM ± 5% ¼W	1	R204
32	16–¼CM824J	CARBON RES. 820 OHM ± 5% ¼W	1	R402
33	16–¼CM101J	CARBON RES. 100 OHM ± 5% ¼W	1	R406
34	16–¼CN102J	CARBON RES. 1K OHM ± 5% ¼W	2	R145, 403
35	16–¼CN331J	CARBON RES. 330 OHM ± 5% ¼W	1	R153
36	16–¼CN681J	CARBON RES. 680 OHM ± 5% ¼W	2	R502, 504
37	16–1A100J	METAL OXIDE RES. 100 OHM ± 5% 1W	1	R501
38	16–1A102J	METAL OXIDE RES. 1K OHM ± 5% 1W	1	R505
39	16–1A182J	METAL OXIDE RES. 1K8 OHM ± 5% 1W	4	R141, 143, 144, 415
40	16–1A290J	METAL OXIDE RES. 39 OHM ± 5% 1W	1	R146
41	16–1A820J	METAL OXIDE RES. 82 OHM ± 5% 1W	1	R123
42	16–2A681J	METAL OXIDE RES. 680 OHM ± 5% 2W	1	R503
43	17–0.63E227Y	ELEC. CAPA. 220μF/6.3V + 50 –10%	1	C138
44	17–1.6E106Y	ELEC. CAPA. 10μF/16V +50 –10%	12	C123, 130, 201, 208, 210, 216, 219, 220, 403, 405, 126, 130
45	17–1.6E227Y	ELEC. CAPA. 220μF/16V +50 –10%	3	C127, 402, 132
46	17–1.6E476Y	ELEC. CAPA. 47μF/16V +50 –10%	4	C117, 133, 137, 410
47	17–1.60155M	TA. CAPA. 1.5μF/16V ± 20%	1	C214
48	17–1.60224M	TA. CAPA. 0.22μF/16V ± 20%	1	C213
49	17–1.60335M	TA. CAPA. 3.3μF/16V ± 20%	1	C202
50	17–2.5E105Y	ELEC. CAPA. 1μF/25V + 50 –10%	2	C120, 129
51	17–2.5E107Y	ELEC. CAPA. 100μF/25V +50 –10%	3	C503, 504, 505
52	17–2.5E474Y	ELEC. CAPA. 0.47μF/25V +50 –10%	3	C105, 217, 128
53	17–2.5E475Y	ELEC. CAPA. 4.7μF/25V +50 –10%	6	C104, 119, 127, 131, 211, 222
54	17–2.5E477Y	ELEC. CAPA. 470μF/25V +50 –10%	1	C501
55	17–3.5E108Y	ELEC. CAPA. 1000μF/35V +50 –10%	1	C502
56	17–5D104M	CER. CAPA. 0.1μF/50V ± 20%	1	C118
57	17–5D121K	CER. CAPA. 120PF/50V ± 10%	1	C223
58	17–5D203M	CER. CAPA. 0.02PF/50V ± 20%	4	C108, 110, 111, 116
59	17–5D330M	CER. CAPA. 33PF/50V ± 20%	2	C134, 135
60	17–5D332M	CER. CAPA. 0.0033μF/50V ± 20%	1	C128
61	17–5D473M	CER. CAPA. 0.047μF/50V ± 20%	8	C102, 103, 109, 112, 113, 114, 115, 136
62	17–5D511J	CER. CAPA. 510PF/50V ± 5%	4	C206, 211, 203, 214
63	17–5D561J	CER. CPAP. 560PF/50V ± 5%	2	C207, 212
64	17–5F103J	MYLAR CAPA. 1μF/50V ± 5%	1	C218
65	17–5F104J	MYLAR CAPA. 0.1μF/50V ± 5%	1	C406
66	17–5F184J	MYLAR CAPA. 0.18μF/50V ± 5%	1	C404
67	17–5F222J	MYLAR CAPA. 0.0022μF/50V ± 5%	1	C407
68	17–5F333J	MYLAR CAPA. 0.033μF/50V ± 5%	1	C401
69	17–5F473J	MYLAR CAPA. 0.047μF/50V ± 5%	1	C205

ITEM	PARTS NO	DESCRIPTION	Q'TY	SYMBOL NO
70	17–5F683J	MYLAR CAPA. 0.068μF/50V ± 5%	1	C408
71	17–5U511J	STYROLENE CAPA. 510PF/50V ± 5%	1	C215
72	17–5W201K	CER. CAPA. 200PF/50V ± 10% (SL)	1	C139
73	29–1034	INDUCTOR 32μH ± 10%	3	L103, 104, 105
74	29–1038	INDUCTOR 40μH ± 10%	2	L107, 501
75	29–1039	INDUCTOR 18μH ± 10%	1	L106
76	29–3008	FM DET. COIL 10.7MHZ	1	TR101
77	29–3016–1	L. P. F. 19, 38KHZ Filter	1	FT201
78	29–3027	CERAMIC FILTER SFE 10.7MA8	3	CF101, 102, 103
79	29–4056	SEMI-FIXED RES. 200K	1	VR201
80	29–4072	VOLUME CONTROL GM80E–50KBX2	1	VR203
81	29–4077	SEMI-FIXED RES. 10K	1	VR202
82	29–4079	SEMI-FIXED RES. 500K	2	VR101, 102
83	29–4082	SEMI-FIXED RES. 50K	1	VR103
84	30–1010	DIODE IN60	2	D107, 108
85	30–1019	DIODE BAW62	6	D101, 102, 105 D106, 109, 201
86	30–1035	BRIDGE DIODE W005	1	BD501
87	30–1038	ZENER DIODE 18V 0.5W	1	D501
88	30–2019	TRANSISTOR 2SC930C	1	Q105
89	30–2080	TRANSISTOR 2SD315E	1	Q501
90	30–2084–3	TRANSISTOR BC549C	4	Q104, 202, 203, 401
91	30–2090–2	TRANSISTOR BC546B	4	Q101, 102, 103, 201
92	30–3012	I.C. LA 1222	1	I. C. 101
93	30–3016	I.C. HA 1196	1	I. C. 210
94	30–3017	I.C. HA 1137	1	I.C. 102
95	30–3021	I.C. CD4011 BE	1	I.C. 401
96	31–1056	SELECTOR SW. SRE–V064M	1	SW 401
97	31–1060	PUSH SW. 5KEY	1	SW. 101, 102, 103 SW. 201, 202

90–1081

1	16–¼CM102J	CARBON RES. 1K OHM ± 5% ¼W	1	R303
2	16–¼CM122J	CARBON RES. 1.2K OHM ± 5% ¼W	1	R307
3	16–¼CM151J	CARBON RES. 150 OHM ± 5% ¼W	1	R302
4	16–¼CM222J	CARBON RES. 2.2K OHM ± 5% ¼W	1	R304
5	16–¼CM223J	CARBON RES. 22K OHM ± 5% ¼W	1	R310
6	16–¼CM332J	CARBON RES. 3.3K OHM ± 5% ¼W	1	R301
7	16–¼CM333J	CARBON RES. 33K OHM ± 5% ¼W	1	R306
8	16–¼CM822J	CARBON RES. 82 OHM ± 5% ¼W	1	R309
9	16–¼CN101J	CARBON RES. 100 OHM ± 5% ¼W	1	R308
10	16–¼CN271J	CARBON RES. 270 OHM ± 5% ¼W	1	R305
11	17–1.6E106Y	ELEC. CAPA. 10μF/16V + 50 – 10%	1	C310
12	17–1.6E227Y	ELEC. CAPA 220μF616V + 50 – 10%	1	C315
13	17–1.6E476Y	ELEC. CAPA. 47μF/16V + 50 – 10%	2	C313, 314
14	17–2.5E475Y	ELEC. CAPA. 4.7μF/25V + 75 – 10%	1	C302
15	17–5D103M	CER. CAPA. 0.01μF/50V ± 20%	5	C303, 306, 309 C311, 312
16	17–5D104M	CER' CAPA. 0.1μF/50 V ± 20%	1	C316
17	17–5D473M	CER. CAPA. 0.047μF/50V± 20%	4	C304, 308, 319 C101
18	17–5M331J	SILVERED MICA. 330PF/50V ± 5 %	1	C317
19	17–5V100K	CER. CAPA. 10PF/50V ± 10% (RH)	1	C318
20	17–5V470K	CER. CAPA. 479F/50V ± 10% (RH)	1	C301
21	17–5W201K	CER. CAPA. 200PF/50V ± 10% (SL)	1	C307
22	17–5W50K	CER. CAPA. 5PF/50V ± 10% (SL)	1	Δ^{305}
23	18–1016–1	BALUN	1	
24	29–1037	INDUSTOR 1MH± 10%	1	L102
25	29–3017	CERAMIC SFL 455	1	LT301
26	29–3018	AM OCS L–39	1	L0301
27	30–1010	DIODE IN60	5	D301, 302, 303, D304, 305
28	30–1019	DIODE BAW62	1	D306
29	30–3018	I.C. HA1138	1	IC301
30	35–2008	FRONT END FB621U	1	TU301

OTHERS

ITEM	PARTS NO	DESCRIPTION	Q'TY	SYMBOL NO
1	12–2012	ANT TERMINAL SDCKET	1	
2	12–2035	SOCKET OSS'Y (4P)	1	
3	12–2037	SOCKET ASS'Y (6P)	1	
4	17–2001	CER. CAPA. ECK–DHS472MD	1	For EC, SC, IL, SI
5	17–2004	CER. CAPA. ECK–DGS47	1	For UL
6	17–2004	CER. CAPA. ECK–DGS 472MD4	1	For UK, AS
7	29–2023	POWER TRANSFORMER	1	For SI, HK
8	29–2023–1	POWER TRANSFORMER (117V)	1	For UL
9	29–2023–2	POWER TRANSFORMER (240V)	1	For UK, AS
10	29–2023–3	POWER TRANSFORMER (220V)	1	For EC, SC, IL, AG
11	29–2023–4	POWER TRANSFORMER (117V)	1	For CSA
12	30–1026	LED YELLOW 3mm	5	
13	30–1027	LED GREEN 3mm	1	
14	31–1002	SWITH 6P	1	
15	31–1039	POWER SWITH TOKO	1	
16	31–2007	LAMP 6.3V 150mA	3	
17	31–2014	LAMP (FUSE TYPE)	2	
18	32–11000WS	FUSE 100mA UL	2	
19	32–11000SS	FUSE 100mAT SEMKO	2	
20	32–11001SS	FUSE 1AT SEMKO	2	
21	32–12000WS	FUSE 200mA UL	2	
22	32–13150SS	FUSE 315mAT SEMKO	2	
23	32–2001	FUSE HOLDER S–N1301	1	
24	32–2003	FUSE HOLDER S–N2250	1	
25	35–1011	TUNING METER	1	
26	35–1018	SIGNAL MULTIPATH METER	1	